

DPM 957-1

# MATERIAL SAFETY DATA SHEET

Dow Chemical U.S.A.\* Midland, MI 48674 Emergency Phone: 517-636-4400

Product Code: 15216

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PRODUCT NAME: CAUSTIC SODA SOLUTION 50%

Effective Date: 12/21/88 Date Printed: 12/30/88

MSDS:000101

## 1. INGREDIENTS: (% w/w, unless otherwise noted)

Sodium hydroxide (NaOH)	CAS# 001310-73-2	48.5-50.5%
Sodium carbonate (Na <sub>2</sub> CO <sub>3</sub> )	CAS# 000497-19-8	<0.2%
Sodium chloride (NaCl)	CAS# 007647-14-5	<1.0%
Water	CAS# 007732-18-5	BAL

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200). In addition, other substances not 'Hazardous' per this OSHA Standard may be listed. Where proprietary ingredient shows, the identity may be made available as provided in this standard.

## 2. PHYSICAL DATA:

BOILING POINT: 293F, 145C approx.  
VAP. PRESS: 1.5 mmHg, 0.2 kPa @ 20C  
VAP. DENSITY: Not applicable  
SOL. IN WATER: Water solution  
SP. GRAVITY: @ 20C (Dens.) 1.52 g/ml  
APPEARANCE: Colorless to slightly colored liquid.  
ODOR: No odor.

*Industrial Hygiene*  
JAN 05 1989

## 3. FIRE AND EXPLOSION HAZARD DATA:

FLASH POINT: None  
METHOD USED: Not applicable

FLAMMABLE LIMITS  
LFL: Not applic.  
UFL: Not applic.

EXTINGUISHING MEDIA: Non-combustible.

FIRE & EXPLOSION HAZARDS: In water solution caustic can react with amphoteric metals (such as aluminum) generating hydrogen

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## 3. FIRE AND EXPLOSION HAZARD DATA: (CONTINUED)

which is flammable and/or explosive if ignited.

FIRE-FIGHTING EQUIPMENT: Wear positive pressure self-contained breathing apparatus.

## 4. REACTIVITY DATA:

STABILITY: (CONDITIONS TO AVOID) Product absorbs water and carbon dioxide from the air. Keep containers closed and sealed.

INCOMPATIBILITY: Water and acid. Product is strong caustic alkali. May react violently with water, acid, and a number of organic compounds. Caustic reacts rapidly with aluminum, tin, and zinc. It will also react with bronze and brass.

HAZARDOUS DECOMPOSITION PRODUCTS: None.

HAZARDOUS POLYMERIZATION: Will not occur.

## 5. ENVIRONMENTAL AND DISPOSAL INFORMATION:

ACTION TO TAKE FOR SPILLS/LEAKS: Only trained and properly protected personnel should be involved in spill cleanup operations. Acting cautiously, small accidental spills of caustic soda solution should be carefully flushed with water. Dilute acid, preferably acetic acid, may be used to neutralize only the final traces of caustic after flushing.

DISPOSAL METHOD: Disposal of caustic soda must meet all federal, state, and local regulations. Contact The Dow Chemical Company for additional information.

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## 6. HEALTH HAZARD DATA:

**EYE:** May cause severe irritation with corneal injury and result in permanent impairment of vision, even blindness. Dusts may irritate eyes.

**SKIN CONTACT:** Short single exposure may cause severe skin burns.

**SKIN ABSORPTION:** A single prolonged skin exposure is not likely to result in absorption of harmful amounts. The dermal LD50 has not been determined.

**INGESTION:** May cause gastrointestinal irritation or ulceration and severe burns of the mouth and throat. Single dose oral LD50 has not been determined.

**INHALATION:** Dusts or mists may cause severe irritation to upper respiratory tract.

**SYSTEMIC & OTHER EFFECTS:** No relevant information found.

## 7. FIRST AID:

**EYES:** WATER is the only accepted method of removal of caustic soda (lye) from the eyes or skin. You may have 10 seconds or less to avoid serious permanent injury. Therefore, IMMEDIATE first aid must be given after any injurious exposure. Moving the victim from water access for transport to medical aid should be done only on the advice of qualified medical personnel. While transporting victim to a medical facility, continue washing if possible.

In case of eye contact, wash eyes immediately and continuously for 30 minutes. Call for medical assistance immediately.

**SKIN:** Immediate continued and thorough washing in flowing water for 30 minutes is imperative while removing contaminated clothing. Prompt medical consultation is essential. Wash contaminated clothing before reuse. Destroy contaminated shoes.

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## 7. FIRST AID: (CONTINUED)

INGESTION: Do not induce vomiting. Give large amounts of water or milk if available and transport to medical facility.

INHALATION: Remove to fresh air if effects occur. Consult medical.

NOTE TO PHYSICIAN: Corrosive. May cause stricture. If lavage is performed, suggest endotracheal and/or esophagosopic control. Material is strong alkali. If burn is present, treat as any thermal burn, after decontamination. For burns of skin only. Eye irrigation may be necessary for an extended period of

time to remove as much caustic as possible. Duration of irrigation and treatment is at the discretion of medical personnel. No specific antidote. Supportive care. Treatment based on judgment of the physician in response to reactions of the patient.

## 8. HANDLING PRECAUTIONS:

EXPOSURE GUIDELINE(S): Sodium hydroxide: ACGIH TLV is 2 mg/m<sup>3</sup> ceiling; OSHA PEL is 2 mg/m<sup>3</sup> (TWA).

VENTILATION: Control airborne concentrations below the exposure guideline. Good general ventilation sufficient for most operations.

RESPIRATORY PROTECTION: In misty atmospheres, use an approved mist respirator. If respiratory irritation is experienced, use an approved air-purifying respirator.

SKIN PROTECTION: Use protective clothing impervious to this material. Selection of specific items such as gloves, boots, apron, hard hat with face-shield or full-body suit will depend on operation. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse.

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## 8. HANDLING PRECAUTIONS: (CONTINUED)

EYE PROTECTION: Use chemical goggles. Full face shield in addition to goggles may be desirable to protect face. Maintain eye wash fountain and safety shower at or near work area.

## 9. ADDITIONAL INFORMATION:

### REGULATORY REQUIREMENTS:

SARA HAZARD CATEGORY: This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

An immediate health hazard

SPECIAL PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Prevent eye and skin contact. Do not breathe dusts or mists.

Avoid storing next to strong acids. Caustic should be stored in clean, dry areas. Do not store in underground tanks. Product absorbs water and CO<sub>2</sub> from air. Keep containers closed and sealed.

### SPECIAL PRECAUTIONS FOR DILUTING CAUSTIC SODA SOLUTION:

1. ALWAYS add caustic soda solution to water with constant agitation. NEVER add water to the caustic soda solution.
2. The water should be lukewarm (80-100F). NEVER start with hot or cold water.

The addition of caustic soda to liquid will cause a rise in temperature. If caustic soda becomes concentrated in one area, or is added too rapidly, or is added to hot or cold liquid, a rapid temperature increase can result in DANGEROUS mists or boiling or spattering which may cause an immediate VIOLENT

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## 9. ADDITIONAL INFORMATION: (CONTINUED)

ERUPTION.

MSDS STATUS: Revised Section 9

### SARA 313 INFORMATION:

This product contains the following substances subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

CHEMICAL NAME	CAS NUMBER	CONCENTRATION
SODIUM HYDROXIDE (SOLUTION)	001310-73-2	48.5    -50.5    %

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The Information Herein Is Given In Good Faith, But No Warranty, Express Or Implied, Is Made. Consult The Dow Chemical Company For Further Information.

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